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10/729,417	12/05/2003	Todd D. Wakefield	5130	8374

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EXAMINER

CAO, PHUONG THAO

ART UNIT	PAPER NUMBER
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2164

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/01/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/729,417

Applicant(s)

WAKEFIELD ET AL.

Examiner

Phuong-Thao Cao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-6,8-10,12,14,17-19 and 21-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-6,8-10,12,14,17-19 and 21-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to Amendment filed on 12/01/2006.
2. Claims 1, 4-6, 9, 12, 14, 17, 18, 21, 22 and 24 have been amended, claims 2, 3, 7, 11, 13, 15, 16 and 20 have been cancelled, and claim 15 has been added. Currently, claims 1, 4-6, 8-10, 12, 14, 17-19 and 21-25 are pending.

Terminal Disclaimer

3. The terminal disclaimer filed on 12/01/2006 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of any patent granted on Application Number 10/729,388, any patent granted on Application Number 10/729,889, any patent granted on Application Number 10/729,414, any patent granted on Application Number 10/729,721, any patent granted on Application Number 10/729,883, any patent granted on Application Number 10/729,888, any patent granted on Application Number 10/729,833, and any patent granted on Application Number 10/729,864 has been reviewed and is accepted. The terminal disclaimer has been recorded.

The examiner notes the fact that the Terminal Disclaimer cited application 10/729,721. The examiner assumes that the Applicants intended to cite application 10/728,721.

Double Patenting

4. In light of the filed Terminal Disclaimer and claim amendments, the previous double patenting rejections are withdrawn.

In the case of previously presented double patenting rejections based upon application 10/728,721, these rejections have been withdrawn based solely upon amendments to the claims.

Response to Arguments

5. Applicant's arguments with respect to claims 1, 4-6, 8-10, 12, 14, 17-19 and 21-25 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

6. Claim 1 is objected to because of the following informalities: "located to" in line 1 should be "located on"; and typographical error "purality" on line 9 should be "plurality". Appropriate correction is required.

7. Claims 8 and 9 are objected as dependent on cancelled claim 7. For the purpose of examination, claims 8 and 9 are considered as depending on claim 1. However, appropriate correction is required.

8. Claims 4-6, 8-10, 12, 17-19 and 21-24 are rejected as being of improper dependent form. The "A" at the beginning of each claim should be deleted and replaced by the "The".

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claim 14 and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 14, claim 14 recites the limitation "the data tuples" in line 12. There is insufficient antecedent basis for this limitation in the claim.

Regarding claim 25, it is unclear in terms of what the pronoun "it" in line 9 refers to.

Claim Rejections - 35 USC § 101

11. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

12. Claims 1, 4, 12, 14, 17 and 25 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

13. Regarding claims 1 and 14, these claims recite the process of integrating mixed format data, but fail to recite a tangible result.

For a result to be tangible, it must be more than just a thought or a computation; it must have real-world value rather than an abstract result. What has been generated, determined, calculated, selected or decided, etc. without using what has been generated, determined, calculated, selected, decided, etc. in a disclosed practical application or at least making what has been generated, determined, calculated, selected, decided, etc. available for use through some form of conveyance (for example, display, print, sound, transmission, etc.) or at least temporary storage somewhere is not considered a tangible result. Processing data in memory such as “integrating the produced data with the data tuples of the structured data” is not considered as tangible result. Note that the limitations of claims 5, 6, 8-10, 18, 19 and 21-23 are not rejected, since they recite implicitly the function of storing the data resulting from the production step in a database or a file which are assumed to be stored on a storage medium not a working or volatile memory.

Claims 4, 12, 17 and 24 are rejected as incorporating the deficiencies of claims 1 and 14 upon which they depend respectively.

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14. Claim 25 is rejected as software *per se*. The claims lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. They are, at best, functional descriptive material *per se*.

Descriptive material can be characterized as either “functional descriptive material” or “nonfunctional descriptive material”. Both types of “descriptive material” are nonstatutory when claimed as descriptive material *per se*, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994).

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 5, 6, 8-10, 12, 14, 18, 19, 21-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Rao et al. (Publication No US 2003/0120458).

As to claim 1, Rao et al. teaches:

“A computer program product located on one or more storage media devices usable to perform integration of mixed format data” (see Abstract and Fig. 3), said computer program product comprising instructions executable by a computer to perform the functions of:

“accessing a database on computer-readable storage media containing data records, at least some data records containing both structured and unstructured data, the unstructured data including free text that has information relatable to the structured data contained in the same data record where the particular free text is found” (see Fig. 2-3, [0008], [0018], [0033]-[0035] wherein CPR system (310) is equivalent to Applicant’s “database”, and each patent medical record is equivalent to Applicant’s “data record”);

“using linguistic information contained in the free text to extract multi-dimensional relational facts from the free text, each multi-dimensional relational fact including a plurality of attributes concerning the free text from which it was extracted” (see [0042] and [0043] wherein any text source or combination of many text sources in the patient medical record can be considered as equivalent to Applicant’s “free text”, probabilistic assertions (elements) about a patient and produced from the extraction component are equivalent to Applicant’s “multi-dimensional relational facts”, each element includes a plurality of attributes such as “name”, “value” and “confidence”);

“producing a set of construed data of said multi-dimensional relational facts, each construed datum relatable to the structured data from the same data record that the free text originated from” (see [0035]-[0037] and [0042] wherein probabilistic assertions are equivalent to Applicant’s “multi-dimensional relational facts”, a set of patient states is equivalent to Applicant’s “a set of construed data”, and each patient state is related to the particular patient medical record as well as other structured data in the same patient medical record); and

“integrating the produced data with the structured data” (see Fig. 3 and [0070]-[0071] wherein the structured CPR including both mined patient information (Applicant’s “produced data”) and patient information including personal information such as patient identification, etc. (Applicant’s “structured data”); also see [0034]-[0036] wherein information is extracted from both unstructured data and structured data).

As to claim 5, this claim is rejected based on arguments given above for rejected claim 1 and is similarly rejected including the following:

Rao et al. teaches:

“producing a new database containing the integrated data” (see Abstract, Fig. 3 and [0071] wherein structured CPR is equivalent to Applicant’s “new database”).

As to claim 6, this claim is rejected based on arguments given above for rejected claim 1 and is similarly rejected including the following:

Rao et al. teaches:

“inserting the produced data into the database of structured data while performing said integrating step” (see Abstract, Fig. 3, [0035] and [0071] wherein structured CPR is equivalent to Applicant’s “database of structured data”).

As to claim 8, this claim is rejected based on arguments given above for rejected claim 1 and is similarly rejected including the following:

Rao et al. teaches:

“produce a new relational database containing the integrated data produced by said integrating” (see [0034] for the disclosure of maintaining patient information in databases tables which is equivalent to Applicant’s “relational database”).

As to claim 9, this claim is rejected based on arguments given above for rejected claim 1 and is similarly rejected including the following:

Rao et al. teaches:

“produce a file containing the integrated data” (see [0069]-[0071] wherein created structured clinical information must be stored as file).

As to claim 10, this claim is rejected based on arguments given above for rejected claim 9 and is similarly rejected including the following:

Rao et al. teach:

“produce a file having a format selected from the group of XML, character separated values, spreadsheet formats and file-based database structure” (see Fig. 2 for file-based database structures).

As to claim 12, this claim is rejected based on arguments given above for rejected claim 1 and is similarly rejected including the following:

Rao et al. teaches:

“wherein the integrated data including reference information to the original free text for construed data” (see [0071] wherein information to identify individual patient represent a reference from information of a patient in the structured CPR (equivalent to Applicant’s “integrated information”) to the patient record in the CPR (equivalent to Applicant’s “original free text”)).

As to claim 14, Rao et al. teaches:

“A method for integrating mixed format data” (see Abstract and Fig. 3), comprising the steps of:

“accessing a database on computer-readable storage media containing data records of mixed structured and unstructured data, the unstructured data including free text that has information relatable to the structured data contained in the same data record where the particular free text is found” (see Fig. 2-3, [0008], [0018], [0033]-[0035] wherein CPR system (310) is equivalent to Applicant’s “database”, and each patent medical record is equivalent to Applicant’s “data record”);

“using linguistic information contained in the free text to extract multi-dimensional relational facts from the free text, each multi-dimensional relational fact including a plurality of attributes concerning the free text” (see [0042] and [0043] wherein any text source or combination of many text sources in the patient medical record can be considered as equivalent to Applicant’s “free text”, probabilistic assertions (elements) about a patient and produced from the extraction component are equivalent to Applicant’s “multi-dimensional relational facts”, each element includes a plurality of attributes such as “name”, “value” and “confidence”);

“producing a set of construed data of said multi-dimensional relational facts, each construed datum relatable to the structured data from the same data record that the free text originated from” (see [0035]-[0037] and [0042] wherein probabilistic assertions are equivalent to Applicant’s “multi-dimensional relational facts”, a set of patient states is equivalent to Applicant’s “a set of construed data”, and each patient state is related to the particular patient medical record as well as other structured data in the same patient medical record); and

“integrating the produced data with the data tuples of the structured data” (see Fig. 3 and [0070]-[0071] wherein the structured CPR including both mined patient information (Applicant’s “produced data”) and patient information including personal information such as patient identification, etc. (Applicant’s “structured data”); also see [0034]-[0036] wherein information is extracted from both unstructured data and structured data).

As to claim 18, this claim is rejected based on arguments given above for rejected claim 14 and is similarly rejected including the following:

Rao et al. teaches:

“producing a new database containing the integrated data” (see Abstract, Fig. 3 and [0071] wherein structured CPR is equivalent to Applicant’s “new database”).

As to claim 19, this claim is rejected based on arguments given above for rejected claim 14 and is similarly rejected including the following:

Rao et al. teaches:

“inserting the produced data into the database of structured data while performing said integrating step” (see Abstract, Fig. 3, [0035] and [0071] wherein structured CPR is equivalent to Applicant’s “database of structured data”).

As to claim 21, this claim is rejected based on arguments given above for rejected claim 18 and is similarly rejected including the following:

Rao et al. teaches:

“wherein the new database is a relational database” (see [0034] for the disclosure of maintaining patient information in databases tables which is equivalent to Applicant’s “relational database”).

As to claim 22, this claim is rejected based on arguments given above for rejected claim 18 and is similarly rejected including the following:

Rao et al. teaches:

“wherein the new database includes at least one file containing the integrated data” (see [0069]-[0071] wherein created structured clinical information must be stored in at least one file).

As to claim 23, this claim is rejected based on arguments given above for rejected claim 22 and is similarly rejected including the following:

Rao et al. teach:

“wherein the new database has a format selected from the group of XML, character separated values, spreadsheet formats and file-based database structure” (see Fig. 2 for file-based database structures).

As to claim 24, this claim is rejected based on arguments given above for rejected claim 14 and is similarly rejected including the following:

Rao et al. teaches:

“wherein the integrated data produced includes reference information to the original free text for construed data” (see [0071] wherein information to identify individual patient represent a reference from information of a patient in the structured CPR (equivalent to Applicant’s “integrated information”) to the patient record in the CPR (equivalent to Applicant’s “original free text”)).

As to claim 25, Rao et al. teaches:

“A computer program comprising executable instructions to perform functions of” (see Abstract and Fig. 3):

“accessing a database on computer-readable storage media containing data records of mixed structured and unstructured data, the unstructured data including free text that has

information relatable to the structured data” (see Fig. 2-3, [0008], [0018], [0033]-[0035] wherein CPR system (310) is equivalent to Applicant’s “database”, and each patent medical record is equivalent to Applicant’s “data record”);

“using linguistic information contained in the free text to extract multi-dimensional relational facts from the free text, the relational facts relating to the structured data” (see [0042] and [0043] wherein any text source or combination of many text sources in the patient medical record can be considered as equivalent to Applicant’s “free text”, probabilistic assertions (elements) about a patient and produced from the extraction component are equivalent to Applicant’s “multi-dimensional relational facts”, and all elements are related to a particular patient or patient information in structured data);

“producing a set of construed data of said multi-dimensional relational facts” (see [0035]-[0037] and [0042] wherein probabilistic assertions are equivalent to Applicant’s “multi-dimensional relational facts”, a set of patient states is equivalent to Applicant’s “a set of construed data”, and each patient state is related to the particular patient medical record as well as other structured data in the same patient medical record); and

“integrating the produced data with the structured data and storing it on computer readable storage media” (see Fig. 3 and [0070]-[0071] wherein the structured CPR including both mined patient information (Applicant’s “produced data”) and patient information including personal information such as patient identification, etc. (Applicant’s “structured data”); also see [0034]-[0036] wherein information is extracted from both unstructured data and structured data).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rao et al. (Publication No US 2003/0120458) as applied to claims 1 and 14 respectively above, and further in view of Gaizauskas et al. ("Information Extraction: Beyond Document Retrieval", 1998).

As to claims 4 and 17, these claim are rejected based on arguments given above for rejected claims 1 and 14 respectively, and are similarly rejected including the following:

Rao et al. does not teach:

"applying caseframes in extracting relational facts from the free text".

Gaizauskas et al. teaches:

"applying caseframes in extracting relational facts from the free text" (see [page 22, paragraph 3] and [page 23, first paragraph]).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Rao et al. by the teaching of Gaizauskas et al. to add the feature of applying caseframes in extracting step since both Rao et al. and Gaizauskas et al. pursue in the field of generating structured data from text and adding this feature provides more

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effective system because it is well known in the art that conceptual natural language processing systems usually rely on case frame instantiation to recognize events and role objects in text and the case frames generate more cohesive output and produce fewer false hits than the original extraction patterns.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong-Thao Cao whose telephone number is (571) 272-2735. The examiner can normally be reached on 8:30 AM - 5:00 PM (Mon - Fri).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Rones can be reached on (571) 272-4085. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PTC

January 23, 2007

Luke J. Messum
Primary Examiner
Art Unit 2167